

Amendments to the Claims

Claims 1-20 (cancelled)

21. (new) A communications system comprising a plurality of top-level domains each having a respective top-level address space; a next-level domain connected one of directly and indirectly to more than one of the plurality of top-level domains, the next-level domain having respective next-level address spaces which are subsets of the respective top-level address spaces of the more than one of the plurality of top-level domains; and a host connected to the next-level domain, the host having host addresses which are members of the respective next-level address spaces such that, when a route is available from any of the more than one of the plurality of top-level domains to which the next-level domain is connected, the next-level domain is arranged to receive information from the top-level domains having an available route, and the host is arranged to use the information to select, from the host addresses, for use as its source address on transmission, an address corresponding to a route which is available.

22. (new) A communications system as claimed in claim 21, wherein the information is an address prefix of the host addresses.

23. (new) A communications system as claimed in claim 21, wherein lifetimes are assigned to the information and the host selects an address corresponding to information having an unexpired lifetime.

24. (new) A communications system as claimed in claim 21, wherein at least one intermediate domain is connected between the next-level domain and a top-level domain and the at least one intermediate domain forwards the information from the top-level domain to the next-level domain.

25. (new) A communications system as claimed in claim 24, wherein the next-level domain is arranged to receive information from the at least one intermediate

domain when a route is available from the at least one intermediate domain to the next-level domain.

26. (new) A communications system as claimed in claim 25, wherein the information from the at least one intermediate domain includes an address prefix inherited from a top-level domain to which the intermediate domain is connected one of directly and indirectly.

27. (new) A communications system comprising: a host operably connected to a first network entity having a plurality of address spaces associated therewith, each such address space corresponding to one of a plurality of second network entities to which the first network entity is connected, the first network entity being arranged to receive information from at least one of the plurality of second network entities from which a return route is available, wherein the host is arranged to process said information from at least one of the plurality of second network entities to select from the plurality of address spaces an address corresponding to such an available return route.

28. (new) A host apparatus having a processing unit, the host apparatus to connect to a next-level domain connected one of directly and indirectly to more than one of a plurality of top-level domains of a communications system, each top-level domain having a respective top-level address space, the next-level domain having respective next-level address spaces which are subsets of respective top-level address spaces of the more than one of the plurality of top-level domains; the host apparatus having host addresses which are members of the respective next-level address spaces, and the processing unit being arranged to use information received by the next-level domain from the top-level domains when a route is available from said top-level domains to which the next-level domain is connected, to select from the host addresses, for transmission from the host apparatus, an address corresponding to a route which is available.

29. (new) A host apparatus as claimed in claim 28, wherein the processing unit is arranged to use information which is an address prefix of the host addresses.

30. (new) A host apparatus as claimed in claim 28, wherein lifetimes are assigned to the information and the processing unit is arranged to select an address corresponding to information having an unexpired lifetime.

31. (new) A host apparatus as claimed in claim 28, wherein the processing unit is arranged to use information from at least one domain intermediate between the next-level domain and a top-level domain when a route is available from the at least one intermediate domain to the next-level domain.

32. (new) A host apparatus as claimed in claim 31, wherein the processing unit is arranged to use information including an address prefix inherited from a top-level domain to which the intermediate domain is connected one of directly and indirectly.

33. (new) A method of selecting an address for transmission by a host apparatus having a plurality of host addresses which are members of a respective plurality of address spaces of a next-level domain to which the host apparatus is connected, the next-level domain being connected one of directly and indirectly to more than one of a plurality of top-level domains of a communications system, each top-level domain having a respective top-level address space, the next-level domain having next-level address spaces which are subsets of the respective top-level address spaces of the plurality of top-level domains; the method comprising the steps of:

the host receiving information forwarded by the next-level domain from at least one of the top-level domains when a route is available from said top-level domains to which the next-level domain is connected; and

using the information to select from the plurality of host addresses, for transmission by the host apparatus, an address corresponding to a route which is available.

34. (new) A method as claimed in claim 33, wherein the information is an address prefix of the addresses and the step of using the information to select from the plurality of addresses comprises selecting an address having a prefix that is a best match to the received prefix.

35. (new) A method as claimed in claim 33, wherein lifetimes are assigned to the information and the step of using the information to select an address comprises selecting an address corresponding to information having an unexpired lifetime.

36. (new) A method as claimed in claim 33, wherein at least one intermediate domain is connected between the next-level domain and a top-level domain, further wherein the step of receiving information from the next-level domain comprises receiving information forwarded by the at least one intermediate domain from the top-level domain to the next-level domain.

37. (new) A method as claimed in claim 33, wherein at least one intermediate domain is connected between the next-level domain and a top-level domain, further wherein the step of receiving information from the next-level domain further comprises receiving information from the at least one intermediate domain when a route is available from the at least one intermediate domain to the next-level domain

38. (new) A method as claimed in claim 37, wherein the information from the at least one intermediate domain includes an address prefix inherited from a top-level domain to which the intermediate domain is one of directly and indirectly connected.

39. (new) Computer executable software code stored on a computer-readable medium for carrying out all the steps of a method of selecting an address for transmission by a host apparatus having a plurality of host addresses which are members of a respective plurality of address spaces of a next-level domain to which the host apparatus is connected, the next-level domain being connected one of directly and indirectly to more than one of a plurality of top-level domains of a communications system, each top-level domain having a respective top-level

address space, the next-level domain having next-level address spaces which are subsets of the respective top-level address spaces of the plurality of top-level domains; the method comprising the steps of:

the host receiving information forwarded by the next-level domain from at least one of the top-level domains when a route is available from said top-level domains to which the next-level domain is connected; and

using the information to select from the plurality of host addresses, for transmission by the host apparatus, an address corresponding to a route which is available.

40. (new) Computer executable software code as claimed in claim 39, wherein the information is an address prefix of the addresses and the step of using the information to select from the plurality of addresses comprises selecting an address having a prefix that is a best match to the received prefix.

41. (new) Computer executable software code as claimed in claim 39, wherein lifetimes are assigned to the information and the step of using the information to select an address comprises selecting an address corresponding to information having an unexpired lifetime.

42. (new) Computer executable software code as claimed in claim 39, wherein at least one intermediate domain is connected between the next-level domain and a top-level domain, further wherein the step of receiving information from the next-level domain comprises receiving information forwarded by the at least one intermediate domain from the top-level domain to the next-level domain.

43. (new) Computer executable software code as claimed in claim 39, wherein at least one intermediate domain is connected between the next-level domain and a top-level domain, further wherein the step of receiving information from the next-level domain further comprises receiving information from the at least one intermediate

domain when a route is available from the at least one intermediate domain to the next-level domain

44. (new) Computer executable software code as claimed in claim 43, wherein the information from the at least one intermediate domain includes an address prefix inherited from a top-level domain to which the intermediate domain is one of directly and indirectly connected.

45. (new) A programmed computer for carrying out all the steps of a method of selecting an address for transmission by a host apparatus having a plurality of host addresses which are members of a respective plurality of address spaces of a next-level domain to which the host apparatus is connected, the next-level domain being connected one of directly and indirectly to more than one of a plurality of top-level domains of a communications system, each top-level domain having a respective top-level address space, the next-level domain having next-level address spaces which are subsets of the respective top-level address spaces of the plurality of top-level domains; the method comprising the steps of:

the host receiving information forwarded by the next-level domain from at least one of the top-level domains when a route is available from said top-level domains to which the next-level domain is connected; and

using the information to select from the plurality of host addresses, for transmission by the host apparatus, an address corresponding to a route which is available.

46. (new) A computer readable medium having computer executable software code stored thereon for carrying out all the steps of a method of selecting an address for transmission by a host apparatus having a plurality of host addresses which are members of a respective plurality of address spaces of a next-level domain to which the host apparatus is connected, the next-level domain being connected one of directly and indirectly to more than one of a plurality of top-level domains of a

communications system, each top-level domain having a respective top-level address space, the next-level domain having next-level address spaces which are subsets of the respective top-level address spaces of the plurality of top-level domains; the method comprising the steps of:

the host receiving information forwarded by the next-level domain from at least one of the top-level domains when a route is available from said top-level domains to which the next-level domain is connected; and

using the information to select from the plurality of host addresses, for transmission by the host apparatus, an address corresponding to a route which is available.